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ABSTRACT

The experimental program in visual-motor-perceptual training in Ramapo Central School District No. 1, Suffern, New York, was used as a guideline to prepare a detailed description of specific activities and exercises to be used by administrators and teachers. In the program, 80 visual-motor-perceptual handicapped children in first, second, and third grades were identified by a Gross Screening Instrument and a Fine Screening Instrument. They were then randomly placed into experimental and control groups. Pretesting consisted of the Lorge-Thorndike IQ Test, the Metropolitan Readiness Test, the Gates-MacGinitie Reading Test, and the Stanford Achievement Test. The children were put into groups to receive training according to individual needs for 1/2 hour daily. Training activities were divided into six major categories: ocular motor, movement, laterality and directionality, spatial judgments, eye-hand coordination, and visualization. On the basis of Fine Screening results 6 months later, the experimental group showed more improvement in visual-motor-perceptual functioning than the control group. The manual suggests specific activities and exercises for teacher use in different settings (regular classroom, physical education, and remedial training). A list of useful equipment and materials and a bibliography are included. (AW)

ED050904

TEACHER MANUAL

in

Visual-Motor-Perceptual Training

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1970 - 71

RAMAPO CENTRAL SCHOOL DISTRICT NO. 1
Suffern, New York

RE003 568

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This teacher manual in Visual-Motor-Perceptual Training was written during the Summer of 1970 by Mrs. Charity W. Marlatt, Visual Training Teacher, and Dr. Ticknor B. Litchfield, Assistant Superintendent for Curriculum, following a year-long experimental project.

Gratitude for their assistance is due to a great number of people, but particularly to Dr. Jerome Lipovsky and Dr. Bernard Paley, Optometric Consultants, and to Dr. Francis G. Cornell, Research Consultant.

TABLE OF CONTENTS

		Page
I.	Introduction.	1
II.	Overview of Experimental Project.	2
III.	Gross Screening	4
	A. Description of the "Involved Child"	4
	B. Experimental Results of Gross Screening	4
	C. Use by the Teacher.	5
IV.	Considerations for Subtle Perceptual Dysfunction.	7
V.	Major Categories of Perception and Activity Objectives. .	8
	A. Ocular-Motor Control.	8
	B. Movement Skills	8
	C. Laterality and Directionality	8
	D. Spatial Judgment.	9
	E. Eye-Hand Coordination	9
	F. Visualization	9
VI.	Suggested Activities for Teacher Use.	10
	A. Activities Useful in Regular Classroom Setting. .	10
	B. Activities Useful in Physical Education	20
	C. Activities Useful for Remedial Specialists. . . .	27
VII.	Equipment and Materials	42
VIII.	Bibliography.	43

I. INTRODUCTION

Upon completion of the Experimental Program in Visual-Motor-Perceptual Training in Ramapo Central School District No. 1, Suffern, during the 1969-70 school year, it was felt that there should be further extension of the program to include the entire district. This manual has been prepared for the administrators, teachers, and specialists of the district. Using the Experimental Program as a guideline, the manual gives a detailed description of specific activities and exercises for visual-motor-perception to be used by the classroom teachers, physical education teachers, reading teachers, and helping teachers.

The material included is not to be considered as a separate curriculum, but rather as activities to be coordinated with the on-going educational program. Several of the activities are already being used. However, variations in these activities will benefit children with perceptual dysfunctions. Since development in perception is a continual and learned process, there are two purposes of the activities in this manual. First, the use of these activities in Kindergarten and First Grade will establish a program for the prevention of perceptual dysfunction. Second, in the remaining primary grades and in the intermediate grades, this material should be used primarily for remediation.

II. OVERVIEW OF EXPERIMENTAL PROJECT

Eighty children of two schools in first, second, and third grades were identified as having visual-motor-perceptual handicaps which may be affecting their academic performance. They were identified using a Gross Screening Instrument of 16 checklist items filled out by classroom teachers, and by a Fine Screening Instrument used by optometric consultants. The 80 children were randomly placed into experimental and control groups. Pretesting consisted of the Lorge-Thorndike I.Q. Test for all grades, the Metropolitan Readiness Test for grade 1, and the Gates-McGinitie Reading Test and Stanford Achievement Test for grades 2 and 3.

In each of the schools, three training groups were established made up of six to eight children each. Training took place for six months, from November, 1969 to May, 1970. The groups met daily for one-half hour periods. Exercises and activities varied according to the individual deficiency and progressed from simple to more sophisticated variations. Training exercises and activities can be divided into six major categories as follows: ocular motor; movement skills, including balance, one-sided movement, alternate movement, and reciprocal movement; laterality and directionality; spatial judgments; eye-hand coordination; and, visualization.

Post-testing was completed at all three grade levels using Fine Screening, Lorge-Thorndike I.Q. Test, Gates-McGinitie Reading Test, and the Stanford Achievement Test.

The Gross Screening Instrument was found to be a useful tool for teacher use in the detection of students with possible visual-motor-perceptual handicaps. It is simple to use and easy to administer. On the basis of fine screening results more improvement was shown in visual-motor-perceptual functioning by the experimental group than by the control group.

The lack of gains on I.Q. and achievement tests between the experimental group and the control group may be due to several factors. The experimental period was of short duration and training was for only one-half hour per day. There were variations in the control of students in the project in special areas of instruction. The training emphasis in the experimental project was primarily physical in nature. The testing program, except relating to the fine screening, did not directly measure facets for which training was being given.

It is considered that the project was a success and that there were improvements shown in students participating in the experimental program. It is recommended that visual-motor-perceptual programs continue in our school district in a variety of different settings.

III. GROSS SCREENING

During the Summer of 1969 the optometric consultants devised a Gross Screening Instrument of 16 checklist items to be used by teachers in a classroom setting. The purpose of this instrument was to initially screen students with possible visual-motor-perceptual handicaps.

A. DESCRIPTION OF THE "INVOLVED CHILD"

The perceptually handicapped child is one who has subtle or severe difficulty in relating to aspects of his environment. Important areas of perception include ocular-motor skills, movement, laterality and directionality, spatial judgments, eye-hand coordinations, and visualization. Difficulties in these areas may have implications upon the ability of the individual to function to capacity in academic areas of the school program.

The "involved child" often displays obvious manifestations of his handicap. In the classroom, he has difficulty following simple directions. For example, if asked to go to the closet in the back of the classroom and to bring back a pair of scissors, he may go and return, only to relate that he has forgotten what he was sent to get. All too frequently, the teacher does not persist in requiring the child to program these directions and carry-through with the activity. This child needs a great deal of practice following simple directions for programing. The perceptually handicapped child also has difficulty copying work from the blackboard. He needs a variety of experiences working directly on the blackboard prior to being asked to copy from the blackboard. Again, the usual classroom setting provides little opportunity for a child to write on the blackboard. Important gross muscle coordination is therefore lacking when he is required to use fine muscles while using paper and pencil. As related to reading, this child has many problems picking out specific detail within a picture. He will also have difficulty in reading comprehension.

B. EXPERIMENTAL RESULTS OF GROSS SCREENING

The Gross Screening Instrument was administered to grades 1, 2, and 3 in the Cypress Road School and the Montebello Road School by each classroom teacher. This was administered twice, during the first two weeks in September, 1969, and again during December, 1969. The reason for duplication was that there was a question as to how adequately the

teachers could judge the performance of children at the beginning of the school year when they were not well acquainted with the students. Analysis showed that there was no difference in results between the two administrations of the Gross Screening Instrument. This indicates that thorough knowledge of a student and his habits is not necessary for effective use of the instrument. Furthermore, the Gross Screening Instrument was found to be a useful tool in the detection of students with possible visual-motor-perceptual handicaps.

C. USE BY THE TEACHER

The Gross Screening Instrument is simple to use and easy to administer. The 16 items included were devised in such a fashion that teachers can administer the instrument on an informal basis through general observation of student behavior in the classroom. Observation of student activities should give adequate information for the completion of these items. Expectation for performance varies according to the grade level at which it is used. "Normal" performance for a first grader might indicate a perceptual dysfunction on the second or third grade level. For example, it is not uncommon for a child to reverse letters on the first grade level; however, this may indicate a definite perceptual dysfunction if displayed on the second or third grade levels. A copy of the Gross Screening Instrument accompanies this page.

RAMAPO CENTRAL SCHOOL DISTRICT NO. 1
Suffern, New York

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GROSS SCREENING INSTRUMENT

This instrument is to be completed by each classroom teacher of grades 1, 2, and 3 in the Cypress Road and Montebello Road Schools for each student. This is the first phase in the "Visual-Motor-Perceptual Training" research project and is intended to initially screen students who may have visual problems related to learning. Following this initial screening, the optometric consultants will conduct fine testing procedures.

Each student should be marked with a +, 0, or - in each of the 16 items as follows:

+ Student performs or exhibits item satisfactorily.
0 Positive or negative performance on item not noticed, or no opportunity to observe.
- Student does not perform or exhibit item satisfactorily.

Item (Please check appropriate column)	+	0	-
The student:			
1. exhibits a positive attitude toward school.			
2. exhibits acceptable classroom behavior.			
3. does not exhibit, in general, immature behavior.			
4. is generally well coordinated.			
5. exhibits acceptable ability to follow instructions.			
6. exhibits acceptable performance with pencil, crayons, scissors.			
7. exhibits acceptable performance at block play.			
8. has no difficulty in distinguishing objects, letters, pictures, etc. that are similar but have different elements, shapes or orientation.			
9. has no difficulty copying from the chalkboard.			
10. exhibits no tendency to close or cover one eye.			
11. can maintain balance on either foot for a minimum of 10 seconds.			
12. can hop on either foot for a minimum of 5 hops.			
13. can skip across the room.			
14. exhibits no tendency to turn or twist body on paper and pencil tasks.			
15. exhibits no tendency to twist paper on paper tasks.			
16. always uses same hand (chalkboard, pencil, throwing, etc.).			
Total Number			

Adapted by:
Jerome Lipovsky, O.D.
Bernard Paley, O.D.

Name of Student_____

Teacher_____

Grade_____

School_____

IV. CONSIDERATIONS FOR SUBTLE PERCEPTUAL DYSFUNCTION

As related in the previous description of the involved child, there is often much difficulty in discerning the subtle manifestations of the perceptually handicapped child. One of the purposes of this manual is to create a more complete awareness of such dysfunctions. Since this area is relatively new in education, there are still many unanswered questions. The following, however, are considerations which may increase the teachers' awareness and knowledge of the problem.

1. Kindergarten - Since there is no formal physical education program in Kindergarten, it is hoped that many of the activities in this manual designated for physical education will be used in Kindergarten to initiate a program of prevention. It is felt that a five-minute activity session each day would be sufficient to help overcome some problems.

2. Use of Blackboard - The use of the blackboard at all grade levels is very important. Gross muscle coordination must develop before paper and pencil tasks can be accomplished. Please allow those children having problems to use the blackboard.

3. Copying From the Blackboard - Many children with subtle perception dysfunctions have trouble visualizing what is written on the blackboard and then trying to reproduce it. Special consideration should be given to these children and activities related to this skill should be applied.

4. Following Simple Directions - Special attention should be given to those children who have difficulty following simple directions as given by the teacher. Much practice is needed in following verbal instructions, before the child can follow written directions.

5. Fine Detail - As related to omissions in reading or arithmetic, the child with a perceptual dysfunction will have problems picking out fine detail in a picture. Again, much practice is necessary in an attempt to compensate for this dysfunction.

6. Psychological Problems - In the experimental study, it was found that several of the children involved also had psychological problems or had been referred to the psychologist at some time. It is necessary to use a "team" approach in dealing with such children, so that there is a continuous evaluation involving all professional staff that come in contact with the child.

V. MAJOR CATEGORIES OF PERCEPTION AND ACTIVITY OBJECTIVES

A. OCULAR-MOTOR CONTROL

The objective in ocular-motor control is to control eye movement. This includes the capacity of the individual to fixate accurately on a target at near, mid and far points in space, to scan a surround for meaning in all directions on the vertical and horizontal planes and to steer the body in proper alignment for movements through space.

B. MOVEMENT SKILLS

The major objective in this area is to develop movement skills. Included in this area are balance, bilateral movement, one-sided movement, alternate movement and reciprocal movement. These all involve either gross motor patterns or fine motor patterns.

1. Balance is the capacity of the individual to maintain equilibrium from the beginning to the end of a task.

2. Bilaterality is the capacity of the organism to reciprocally interweave two sides in a balanced relationship of thrusting and counterthrusting patterns around three coordinates of vertical, horizontal and depth in proper alignment from initiation to completion of a task.

3. One-Sided or Homolateral Movement is movement of only one side of the body at a particular time. This relates to dynamic balance and the individual's body awareness in space.

4. Alternate Movement relates to the movement of different sides of the body within an alternate pattern and as related to dynamic balance and body awareness in space.

5. Reciprocal Movement is defined as body movement with the movement on the right side corresponding with movement on the left. Many of the activities of reciprocal movement are similar to those found under bilateral movement or alternate movement. The only difference is that both hands or feet are required to do the same thing or move in the same direction.

C. LATERALITY AND DIRECTIONALITY

Under laterality and directionality the objective is to develop an awareness of direction within an individual and

related to his environment. Laterality is defined as a sense of orientation or an awareness of direction, such as up-down and left-right. This is a posture in which a person has equilibrium with gravity. Directionality, on the other hand, is a projection outward of laterality and enables an individual to realize equilibrium with his environment.

D. SPATIAL JUDGMENT

The objective of spatial judgment activities is to develop the ability of the individual to make spatial relationships, distance judgments and size and form discrimination.

E. EYE-HAND COORDINATION

Eye-hand coordination activities are designed to develop the ability of the child to coordinate activities of the eyes and hands.

F. VISUALIZATION

The objective of visualization activities is to develop the ability of an individual to picture an image in his mind. This includes the development of visual memory and recall.

VI. SUGGESTED ACTIVITIES FOR TEACHER USE

This section presents specific activities and exercises for the classroom teacher, physical education teacher, and remedial specialists. This is not meant to limit exercises to any one area and it should be understood that any activity could be used in all three settings.

A. ACTIVITIES USEFUL IN REGULAR CLASSROOM SETTING

1. Teams - Bilateral Movement

   a. Objectives - To develop skills in awareness of body parts and sidedness. To develop ability in following directions and maintaining rhythmic pattern.

   b. Activity - The hands and feet are used in teams. To the count of a metronome, for instance, the right hand would be hit on the right knee followed by the right foot tapping the floor, and vice versa. The same thing would be done with the left hand and knee and left foot. Variations of this can be used with two taps, three taps, or four taps, or alternating taps.

2. Bilateral Reading and Movement - Bilateral Movement

   a. Objectives - To develop skills in bilaterality and the interpretation of patterns read from the chalkboard. To develop skills in continuous eye movement from left to right. To train for auditory awareness as in all activities with the metronome.

   b. Activity - Stick figures are placed on the blackboard with various body positions such as hands on his head, on his shoulders, at waist, on knees, or on toes. Approximately five rows of 25 such figures with varying patterns are placed on the blackboard. The student performs the positions indicated by the stick figures according to the chalkboard sequence, or in a sequence pointed to by the instructor. The metronome is used in this activity.

3. Simon Says - Bilateral Movement

   a. Objectives - To develop skills in following a given pattern. To promote awareness of body parts and their relationship in space.

b. Activity - Following the teacher, students perform facing movements in accordance with her direction and movement. Verbalization is not used.

4. Heels and Toes Apart-Together - Bilateral Movement

a. Objective - To develop skills in bilateral foot movement, symbol reading and the ability to maintain rhythm patterns.

b. Activity - Varying levels of difficulty in this exercise are used. Beginning with demonstration by the teacher more successive levels of difficulty include use of symbols on the board and verbalizing to count movements of heels and toes going apart and together.

5. Chalkboard Cat and Mouse - One-Sided Movement

a. Objective - To develop skills in visual discrimination of line placement and the ability to maintain one-sided movement.

b. Activity - Two grids of dots or circles are used by the instructor and the subject. The instructor draws a line from one dot to another; the subject repeats this on his own grid. This continues from dot to dot throughout the grid with the subject following each movement of the instructor on his own grid.

6. One-Sided Blackboard Movement - One-Sided Movement

a. Objective - To develop skills in symbol reading, left to right eye movement, and interpretation of body parts as related to space.

b. Activity - Using blackboard symbols to indicate various body movements described earlier such as hand-on-head, hand-on-shoulders, etc., this activity is used for either the right side or the left side as may be necessary

7. Teams - Alternate Movement

a. Objective - To develop skills in following directions. To promote ability to alternate body movement from one side to the other using rhythmic control.

b. Activity - The right hand on the right knee is followed by the left hand on the left knee which, is

followed by the right foot tapping on the floor, and then the left foot tapping on the floor. Variations of this are also used as before.

8. Around the Bases - Alternate Movement

   a. Objectives - To develop ability in coordinating activities with different parts of the body. To develop skills in maintaining rhythm.

   b. Activity - Hand and foot movements are combined in this exercise such that the right hand hits the right knee, the right foot the floor, the left foot the floor and the left hand the left knee. There are variations on this and tapping is done to the count of a metronome.

9. Teams - Reciprocal Movement

   a. Objective - To develop skills in maintaining rhythm in a pattern and movement in a reciprocal fashion.

   b. Activity - In this exercise, the right hand taps the right knee, the left hand the left knee, the left foot taps the floor, then the right foot taps the floor. This is the same general pattern as alternate-movement exercise.

10. Reading and Movement - Reciprocal Movement

   a. Objectives - To develop and reinforce skills in symbol reading. To increase ability to reverse movement to either side of the body.

   b. Activity - This is a similar activity to bilateral reading and movement previously described. Symbols are placed on the blackboard indicating either bilateral or one-sided movement. These patterns are mixed, therefore presenting symbols like right hand out, left leg out.

11. Simon Says - Reciprocal Movement

   a. Objectives - To develop skills in listening and following directions. To establish reciprocal movement of various body parts.

b. Activity - This is the same activity as described previously. Following the instructors pattern, the child is asked to move either bilaterally or in a one-sided fashion or a mixture of the two.

12. Follow the Leader - Reciprocal Movement

a. Objectives - To develop the awareness of body parts and movement in space. To reinforce all reciprocal movement.

b. Activity - With the teacher as a leader, activities which represent reciprocal movement are used with the students following the teacher.

13. Lines and Directions - Laterality and Directionality

a. Objective - To develop the ability to distinguish between directions and reproduce verbal instructions.

b. Activity - Using the chalkboard, students draw and identify lines in specific directions, such as up-down, left-right, up-right, down-left, up-left, and down-right.

14. Lines in Eight Directions - Laterality and Directionality

a. Objectives - To develop the ability to distinguish between directions and produce chalkboard lines in accordance with verbal instructions. To learn names and directions of different lines.

b. Activity - Students draw lines in the eight directions indicated in the previous activity from a center point and label the lines as being up-right, down-left, up-left, etc. Variations on this can include lines and arrows which change direction at various points.

15. Identification on Chalkboard - Laterality and Directionality

a. Objective - To reinforce and further teach directional words and their meaning in terms of space.

b. Activity - Students identify the various parts of the chalkboard, such as top, bottom, left, and right.

16. Chalkboard Angels - Laterality and Directionality

a. Objectives - To train the child for more complicated programing of symbolic processes as related to body awareness and to reinforce learning of the concept of backwards.

b. Activity - Chalkboard angels can be done using two variations of stickmen on a chalkboard. In one instance, the stickmen are facing in the same direction as the student; in the other instance, the chalkboard stickmen are facing the student. The student is asked to move his arm and/or leg as represented by the part of the stickman pointed to by the instructor on the chalkboard. He must maintain this position until another part of the body of the stickman is touched. The most elementary variation is when the stickman is facing in the same direction as the student. When the stickman is facing the student, the student must interpret which arm and which leg the stickman is actually using. In this sense, left is right and right is left.

17. Visual Measurement of Distance - Spatial Judgment

a. Objective - To promote skills in prediction of body in space and the concept of "near-space" (a two foot space in all directions around child), "mid-space" (2 - 12 feet in all directions), and "remote space" (all space 20 feet and beyond).

b. Activity - A subject is asked to determine how many steps it will take him to get to a certain point five or ten feet away from his position. After determining this, he is asked to substantiate it by trying it in practice.

18. Map Game - Spatial Judgment

a. Objective - To promote skills in interpretation of maps and prediction of the body in space.

b. Activity - A map of the room is placed on the blackboard. As the instructor points to a point on the map, the child is asked to go to that point in the room.

19. Around the Room Game - Spatial Judgment

a. Objectives - To develop skills in the location of an object in space and the ability to recall. To promote accuracy in sequencing.

b. Activity - Numbers are put on oak tag cards and placed in various locations around the room. The child is asked to use sequencing to find these numbers in the order in which he is directed. For example, he may be given the direction to touch 3, 6, and 9 with his right hand and 2 and 4 with his left hand. Different parts of the body and sequencing are used.

20. Parquetry Routine - Spatial Judgment

a. Objectives - To learn form identity regardless of orientation in space and to perceive that form quality remains the same despite variation in color and size. To develop part-whole concept.

b. Activity - Using parquetry blocks, the child is asked to complete geometric forms from a parquetry pattern.

21. Paper Folding - Spatial Judgment

a. Objectives - To develop skills in following direction. To promote ability in reproducing complex lines in a concrete manner.

b. Activity - A Japanese art form called oragami is used. Square pieces of paper are folded in various forms such as a bird, a whale, a fish, etc. These are completed by following specific folding instructions. Upon completion, these oragami objects can be hung from the ceiling for decorative purposes, as well as used for walking beam and balance activities by tapping the objects with the hand while passing by.

22. Shap-O - Spatial Judgment

a. Objectives - To develop awareness of geometrical forms and their relationship to one another. To promote speed and accuracy.

b. Activity - A tupperware receptacle containing various geometrically shaped holes is used for children to fit shaped objects into the appropriate holes.

23. Build-O-Form - Spatial Judgment

a. Objectives - To promote self-expression. To develop ability in manipulative skills.

b. Activity - Tupperware pieces including blue and red interlocking squares, white fasteners and black and yellow circles are used to construct three dimensional figures.

24. Perceptual-Motor Activities - Spatial Judgment

a. Objective - To develop skills in form discrimination as related to discrimination between letters of the alphabet and between numbers.

b. Activity - Erie Program, Part I. The main purpose of this unit is to provide the individual child with practice in recognizing different common geometric forms under increasingly complex conditions. It serves for one of the bases for discriminating between letters of the alphabet and between numbers. There are five game boards of increasing difficulty. A die has various geometric forms which correspond with those on the game boards. The players alternately roll the die to determine the next move. Care is taken that the child moves to the correct geometric form. The person reaching the end first wins. Alternate methods of playing are provided.

25. Perceptual Bingo - Spatial Judgment

a. Objectives - To establish ability in simple form discrimination. To develop more complex skills in form conceptualization.

b. Activity - Erie Program, Part II. Perceptual Bingo is a series of exercises which are arranged sequentially in increasing difficulty for simple form discrimination and to establish conceptualization. A stimulus book is used by the instructor. Each child has a booklet containing six levels of difficulty. On each page of each level, there is an assembly of sixteen cells each of which frames a geometric form. Fifteen of the stimulus cue cards match fifteen cells of each child's booklet. The remaining three cue cards lettered A, B, and C match booklets A, B, or C. The instructor can give each

child a winning experience by completing the sixteenth cell with either A, B, or C. As difficulty increases, different sections of the stimulus book are used.

26. Clock Arithmetic - Eye-Hand Coordination

    a. Objectives - To establish skills in maintaining a rhythm while involved in a task of a different nature. To reinforce accuracy in arithmetic and number concepts.

    b. Activity - On a round piece of oak tag or on the blackboard, numbers from 1 to 30 are written in mixed order. With the use of the metronome, the child is asked to think of a combination of numbers for addition or subtraction. Listening to the beat of the metronome, the child verbalizes the arithmetic problem and gives the answer as he points to an appropriate number. For instance, on separate beats of the metronome, a child may point to the separate numbers and say "four plus four equals eight." Alternate clocks may be made for multiplication and division. The childs ability to maintain the beat with this exercise is important.

27. Clock Spelling - Eye-Hand Coordination

    a. Objectives - To develop skills of maintaining rhythm while involved in a task of a different nature. To reinforce accuracy in letter recognition, spelling, and word concepts.

    b. Activity - The same procedure is used for this exercise as in the previous except that the alphabet is written on the clock instead of numbers. Here the child is asked to spell words to the beat of the metronome.

28. Cutting Exercises - Eye-Hand Coordination

    a. Objectives - To increase accuracy in eye-hand coordination and dynamic hand control in a manipulative task. To reinforce knowledge of lines and geometric forms.

    b. Activity - Eye-hand coordination is further facilitated by simple cutting exercises using scissors. Children are directed to cut specific measurements

on a piece of paper, ge metric forms or figures of objects. This may be made more difficult by folding the paper for cutting to obtain a specific design.

29. Coloring Exercises - Eye-Hand Coordination

a. Objective - To promote the development of unrestricted but controlled arm and hand movement.

b. Activity - Teacher made or commercially produced forms for coloring may be used. It is important for children in these exercises to stay within the lines while coloring.

30. Tachistoscopic Tic-Tac-Toe - Visualization

a. Objective - To promote optimum efficiency in ability to recall from visual memory a pattern previously seen.

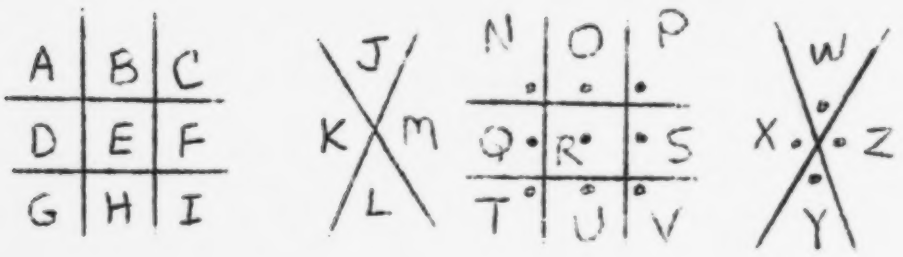
b. Activity - Using a regular Tic-Tac-Toe grid on either the blackboard or paper and pencil, combinations of geometric forms are placed within the grid. Two grids are made; one for the instructor and one for the student. Several X's are put in boxes in the instructors grid. This grid is covered so that the student does not see it until the designated time. The teacher's grid is then revealed for ten seconds and recovered. Before reproducing the X's in the proper position on the student's grid, the student should close his eyes and attempt to see the uncovered grid in his visual memory. Then he is directed to fill in his grid according to what he has visualized.

31. Coding - Visualization

a. Objectives - To develop ability in using symbols to produce meaningful material. To promote visual discrimination of various symbols and train visual memory to recall these symbols. To reinforce spelling and sentence writing.

b. Activity - Using the alphabet, a code is determined for each letter placed in a standard tic-tac-toe

grid or variations thereof. Using this code, the child is asked to reproduce a word.



EXAMPLE: □□□□□□□ IS BELIEVE

At advanced levels, the child can write sentences.

32. Make-A-Word - Visualization

a. Objective - To develop ability in visualizing small words in a large one or using visual memory to place letters in proper sequence to make a word.

b. Activity - Letters are placed on the blackboard in a mixed fashion. The child is asked to unscramble the letters and make a word. Similar to the previous, a scrambled word is placed on the blackboard. The child is required to find as many small words as he can within the scrambled word.

33. Hangman - Visualization

a. Objectives - To promote ability in visual memory and sequencing of letters. To reinforce skills of spelling and manipulation of letters. To stimulate group participation.

b. Activity - The traditional game of hangman also facilitates the ability to visualize. A child would decide on a word and put blank spaces down to signify each letter. The other children attempt to guess letters which are included in the word. A correct guess is placed upon the appropriate line. An incorrect guess enables the leader to draw another part of a man being hung on the blackboard. Here the leader is playing against the group.

34. Remember the Object - Visualization

a. Objectives - To develop ability in visual discrimination of size and form of objects. To develop visual

memory with optimum efficiency of recall of objects previously seen.

b. Activity - On a tray the instructor places approximately ten small objects which differ in shape and color. These are covered and then presented to the children for ten seconds. They are asked to look at these carefully and try to remember what they have seen. When the cover is replaced, they are asked to write down as many objects as they recall.

B. ACTIVITIES USEFUL IN PHYSICAL EDUCATION

1. Rolling - Balance

a. Objective - To develop the concept of body awareness and elementary gross muscle movement.

b. Activity - Left to right rolling across a floor surface. Activities of this sort would be at the very elementary level as far as balance dysfunction is concerned. This would be considered a large-motor activity.

2. Sit-Ups and Leg Lifts - Balance

a. Objective - To develop the awareness of various body parts as the invariant spatial center for contributing spatial coordinates in the world around.

b. Activity - These are traditional sit-ups and leg lifts used in physical education activities.

3. Walking Beam - Balance

a. Objectives - To develop skills in maintaining dynamic balance, controlled movement of the body through space. To increase skills related to laterality.

b. Activity - In the experimental project a special walking beam was used which had a two-by-four in the middle. On each side of the two-by-four beam was an inclined platform of about five inches in width. Activities using this walking beam included: walking on the platforms on either side of the two-by-four beam; walking down the right platform placing one foot in front of the other, using a very slow and distinct step; Crisscross walking with the left foot

on the right platform and the right foot on the left platform; walking backwards using all of the previously mentioned variations; focusing of attention by the subject on a distant object such as a Marsden Ball or a spot on the wall using the previous variations; throwing and receiving a ball on the walking beam.

4. Balance Board - Balance

   a. Objectives - To develop skills in maintaining dynamic balance and shifting of weight. To promote understanding of body parts as related to the environment.

   b. Activity - The balance board used in the experimental project was a square 18-by-18 inch board containing a rubber mat on the top surface. Attached to the bottom were two rockers on opposite sides of the board. Among the activities for which the balance board was used are: learning to balance on the board with the board remaining in a stationary position for very elementary use, with the body erect; balancing in the middle to the right side and to the left side with the ability to hold a two or three second count; going to particular directions on command such as left, two, right, five, etc.; going right and left to the beat of a metronome; going forward and holding to a count, to the middle, and to the back and holding on a count; catching a ball while balancing; bunting the Marsden Ball while balancing.

5. Balancing on One Foot - Balance

   a. Objective - To develop skills in dynamic balance and ability to alternate sides while maintaining this balance.

   b. Activity - This activity involves the ability to balance on the left or the right foot and interchangeable balancing from one foot to the other.

6. Stiff Leg Stand - Balance

   a. Objectives - To develop skills in dynamic balance. To develop ability to follow directions and maintain a pattern of counting.

   b. Activity - Standing stiff legged for a count of three on the right leg and the left leg.

7. Jumping - Bilateral Movement

   a. Objectives - To develop skills in dynamic balance and the ability to alternate body sides. To develop awareness of body as it functions in space.

   b. Activity - Three examples of jumping exercises are as follows. Using two yardsticks with varying degrees of space in between them, the student jumps over them forward and backwards. Another activity involves jumping off and on a block of wood. Variations of this are jumping off the block of wood forward and backward and to the right and left. The old game of high water using a jump rope may also be used. The rope is lifted higher and higher, making it more and more difficult for the children to jump over the rope.

8. Ball Bounce and Throwing - Bilateral Movement

   a. Objective - To develop skills in eye-hand coordination and hand movement using both hands.

   b. Activity - Using both hands, a student bounces or throws a ball at a target or to another child.

9. Jumping Jacks - Bilateral Movement

   a. Objective - To develop skills in bilaterality in a total body movement and auditory interpretation of a distinct verbal pattern.

   b. Activity - Standard jumping jack exercises are used beginning with a two-count movement and then progressing to a four-count movement.

10. Jumping Rope - Bilateral Movement

   a. Objectives - To develop skills in dynamic balance. To promote ability in maintaining rhythm and bilateral movement through space.

   b. Activity - Progressive activities in jumping rope are used beginning with merely having the student get over the rope. Following this, two-foot jumps are used and then double jumping. A final phase of jumping rope would be to have a student jump into a rope being turned by two other students.

11. Ball Bouncing - One-Sided Movement

a. Objective - To develop skills in eye-hand coordination and competence in the use of preferred and non-preferred side.

b. Activity - A ball is bounced, using either the right hand or the left hand. The symbols + and - are used on the blackboard to signify right and left hand respectively for bouncing. This is written in various patterns. For example, + - + + - - + - would be right, left, right, right, left, left, right, and left.

12. Hopping - One-Sided Movement

a. Objective - To develop skills in using preferred or non-preferred leg in maintaining a set pattern.

b. Activity - Either the right or the left leg is used for hopping. Again, the blackboard pattern, mentioned in the previous activity, can be used.

13. Ball Bouncing - Alternate Movement

a. Objectives - To develop skills in eye-hand coordination. To promote ability in maintaining a ball bounce with either hand and coordinating parts of the body in different activities simultaneously.

b. Activity - An alternating pattern of bouncing, such as two with the right hand and two with the left hand is used. Variations are also used. One of the variations is to swing the body to the left when bouncing with the right hand and to the right when bouncing with the left hand.

14. Alternate Hopping - Alternate Movement

a. Objectives - To develop ability in alternate movement of the feet. To develop ability to maintain a pattern as directed.

b. Activity - This exercise contains alternate hopping on right foot and left foot with variations of count as may be appropriate and necessary. The metronome can be used.

15. Arm and Leg Swing - Alternate Movement

a. Objective - To develop skills in alternate side of the body movement so that one side moves in one direction and the other in the opposite.

b. Activity - As the right leg and arm are swung forward, the left arm is swung backward. These swings are continuous and then reversed.

16. Alternate Arm Jumping Jacks - Alternate Movement

a. Objectives - To develop skills in bilaterality so that one side moves in one direction and the other in the opposite. To promote arm and foot coordination.

b. Activity - As in the regular jumping jacks, there are four counts. On the count of one, the right hand is raised; on the count of two, the left arm is raised; on the count of three, the right arm is lowered; on the count of four, the left arm is lowered. The same foot movement as the standard jumping jack is used.

17. Ball Bounce with Foot Swing - Reciprocal Movement

a. Objectives - To increase ability to maintain reciprocal movement of both hands and feet. To develop skills in eye-hand coordination.

b. Activity - While bouncing a ball with right hand, the feet are pointed to the left away from the bouncing activity. When the ball is switched to the left hand for bouncing, the feet are pointed to the right. Various counts are used.

18. Hand, Eye and Feet Pointing - Reciprocal Movement

a. Objective - To develop skills in smooth and continuous eye movement and to maintain and reverse a given pattern.

b. Activity - The feet are turned to the right and the right hand and eye to the left. In a swinging movement, this pattern is then changed to the opposite sides of the body so that the foot is turned to the left and the right hand and eye to the right.

19. Skipping - Reciprocal Movement

a. Objectives - To develop awareness of the body in space. To promote reciprocal movement of the feet.

b. Activity - Using both sides, the individual slide hops on one foot and then moves to the other foot in a continuous pattern. Use of a counting pattern can be applied by the instructor.

20. Monster Walk - Reciprocal Movement

a. Objectives - To reinforce exaggerated reciprocal movement and dynamic balance. To maintain rhythm pattern.

b. Activity - Beginning with the right foot and right arm deliberately leaning far to the right and maintaining balance on that side for a count of three to five, the student moves to the other side and does the same thing in a walking movement.

21. Ball Stop - Laterality and Directionality

a. Objectives - To teach directional words and their relationship to the body in space. To develop eye-foot and eye-hand coordination.

b. Activity - A ball is rolled toward a child. Shortly before it reaches him, the teacher indicates whether he is to stop it with his right toe, left toe, right heel, left heel, or right hand, left hand. As the child stops it, he is to call out what part of the body it is with which he is stopping it.

22. Series of Steps in Eight Directions - Laterality and Directionality

a. Objectives - To train the child in following directions and carrying through with body movement. To teach directional words.

b. Activity - On command, the child either moves forward, backward, right, left, up-right, back-left, etc. Variations should be used.

23. Facing and Predicting - Laterality and Directionality

a. Objectives - To promote ability in facing a problem and predicting the outcome of body movement. To

teach directional words as related to spatial awareness.

b. Activity - Students are asked to face in certain directions similar to military commands; right, left, about face. An advanced version of this is to have students predict or figure out where they would be after a certain number of facing instructions without actually performing the movements, such as: "Where would you be after you moved right, right, left, about face, right?"

24. Jumping Between Two Points - Spatial Judgment

a. Objective - To develop the concept of near-space and mid-space in all directions, e.g. front, back, above, down, and laterally.

b. Activity - This may be done both on the blackboard and in space. Two points are marked on the floor and the individual jumps back and forth between these two points a given number of times. When done on the blackboard, parallel lines are drawn. Equidistant vertical lines are placed inside the two parallel horizontal lines. Many variations of this may be used on the blackboard.

25. Across the River - Eye-Hand Coordination

a. Objective - To develop skill in throwing and catching and ability to judge the width of a given space or the distance of a set target.

b. Activity - Using a bean bag, two children stand facing one another. Between them, they pretend there is a large river. The object of the game is to catch the bean bag without hitting the water. The distance between the two children may vary.

26. Bean Bag Toss - Eye-Hand Coordination

a. Objective - To promote skills in throwing and catching and estimating distance of a falling object.

b. Activity - The individual may throw the bean bag up. As he does so, he tries to clap a given number of times before he catches it.

27. Group Bean Bag Toss - Eye-Hand Coordination

a. Objectives - To promote ability to program sequential activities while involved in a group activity. To develop self-expression and extend ability to throw and catch an object.

b. Activity - The children stand in a circle. The leader starts a pattern for the bean bag, such as toss up, clap, catch, around his back, catch, under his leg, catch and tosses it to the next person. Each child is directed to watch and repeat the same activity himself when the bean bag gets to him. Self-monitoring is important in this activity.

C. ACTIVITIES USEFUL FOR REMEDIAL SPECIALISTS

1. Marsden Ball - Ocular-Motor Skills

a. Objective - To train the eyes to follow an object through space, while involving figure-ground interpretation.

b. Activity - In the area of ocular-motor control, the Marsden Ball is primarily used for pursuit work. Pursuit is the ability to visually follow an object through space as it moves. In the case of the Marsden Ball, the subject remains stationary as the Marsden Ball is moved either back and forth or in circles and the subjects eye moves accordingly. Progress is noted by observing the movement of the subjects eye while pursuing the Marsden Ball. Left and right ducking movements are also used with the Marsden Ball. A Marsden Ball is nothing more than a tennis ball hanging from a string.

2. Eight Pointed Star - Ocular-Motor Skills

a. Objectives - To train the eye for continuous motion while following a pattern. To develop the capacity to interpret figure-ground.

b. Activity - The form drawn is an eight pointed star with the points numbered. The child is required to listen to the beats of a metronome. Following these beats, he is asked to use only his eyes to follow the lines from one to eight. The movement of the eyes should be smooth and continuous.

3. Chalkboard Saccadics - Ocular-Motor Skills

a. Objectives - To train the eye to change fixation from one object to another. To stimulate eye-hand coordination in terms of fine muscle movement.

b. Activity - Saccadic is defined as the ability to shift eye fixation from one object to another. On the blackboard, the subject is presented with a double geometric figure with one figure smaller and inside the other. Dots are placed in each corner. Using the metronome, a beat is established. Then the subject is asked to draw a line between the dots at each beat. This motion should be deliberate and should continue until he has completed at least ten continuous geometric figures. Alternate forms, such as squares, rectangles, triangles or diamonds may be used. As each child progresses, the double lines can be changed to a single and eventually to the dots at each corner. No body support should be used, only movement of the arms. At advanced levels, the sides of each geometric figure can be broken up into two or even three parts as the subject moves the chalk on the blackboard to make geometric figures.

4. Follow-the-Line - Ocular-Motor Skills

a. Objectives - To develop skill in the interpretation of figure-ground. To train the eye to move smoothly along a set pattern.

b. Activity - Letters A, B, C, D, and E are placed on the left-hand side of the chalkboard in a column. To the right are placed 1, 2, 3, 4, 5. Lines are drawn in a maze type or irregular arrangement from the letters to any number. Right angles should not be used in drawing these lines. Children are then asked to follow the lines visually from left to right. NOTE: Many of the activities are interrelated in nature. This particular activity is one that can also be used for the category of visualization.

5. Mid-Line - Ocular-Motor Skills

a. Objectives - To develop skill in smooth and continuous eye movement. To train for specific dysfunctions related to mid-line gap.

b. Activity - A grid of curved lines is set up on a chalkboard. The child is asked to start at the top and follow the line with his eyes from left to right to the bottom. Movement of the eyes should be smooth without a jump in the center which would indicate mid-line difficulties.

6. Windshield Wipers - Bilateral Movement

a. Objectives - To develop skills in hand movement. To train the eye to focus on a central point with peripheral visual scanning.

b. Activity - Symmetrical windshield wipers are used. Symmetrical is defined as a body movement where movement on the right side is a mirror image of the movement on the left side. With the student's eyes focused at a single point on the blackboard, he moves his hands containing chalk to the right and the left of this focal point, using his right hand and left hand respectively. The basic exercise would have the right point and the left point equal distances from the central focus. Variations of this would be with the outward points at varying distances from the focal point or above or below the horizontal axis. Another variation would be using a chalkboard clock and having the student move from the center of the clock to numbers as directed. The metronome is used in these activities for the purpose of maintaining rhythm.

7. Chalkboard Windshield Wipers - One-Sided Movement

a. Objectives - To develop ability to maintain a central focus with peripheral vision scanning. To increase competence with the preferred or non-preferred side.

b. Activity - With a central eye focus, the student, using one hand with chalk, moves his hand from this focus to another point. This is similar to windshield wipers described before except only one hand is used, presumably the one that needs more attention for one-sided remediation.

8. Windshield Wipers - Reciprocal Movement

a. Objectives - To develop skills in reciprocal eye-hand movement. To train for eye focus on a central point with peripheral visual scanning.

b. Activity - Using a central focus for the eye, the same type of chalkboard activity is used as in symmetrical windshield wipers except a reciprocal pattern is used. In this manner the right hand begins at the central focus and the left hand begins at the left point; both hands then move toward the right so that the left hand is at the central point and the right hand is at the right point. This continues in a back and forth motion.

9. Geometric Forms - Reciprocal Movement

a. Objectives - To develop skills in maintaining a continuous line while focusing on a central point using peripheral scanning.

b. Activity - Using a reciprocal movement each hand draws a geometric form, such as a triangle or a square.

10. Maze - Laterality and Directionality

a. Objectives - To promote learning of directional words (left, right, up, down, above, under, between). To learn to find the most efficient means of getting from one point to another.

b. Activity - On a blackboard, a maze is drawn which goes in different directions--up, down, right, left. Using a piece of chalk, the student places his hand at the beginning of the maze. The student verbally describes the direction in which he must move his hand to successfully maneuver through the maze. Simplified and complicated versions of this may be used.

11. Dodge Marsden Ball - Laterality and Directionality

a. Objectives - To reinforce learning of directional words and body awareness in space. To develop skill in following directions.

b. Activity - As the Marsden Ball is swung back and forth or around in a circle, the child dodges to the left or to the right, or frontwards or backwards or downwards to avoid being touched by the Marsden Ball.

12. Concept of Backwards - Laterality and Directionality

a. Objectives - To promote learning of the concept of backwards as related to reversals of letters. To train the child to copy forms from the blackboard.

b. Activity - Using arrows on the chalkboard or paper and pencil, the student is asked to draw it backwards which involves drawing a mirror image of the arrow. Symbols other than arrows such as a partially completed tic-tac-toe diagram may be used for the same purpose. The concept of upside down may be trained using the same procedure.

13. Forced Reversals - Laterality and Directionality

a. Objectives - To promote understanding of backwardness. To increase accuracy of letter formation and to teach understanding of sequencing.

b. Activity - In the middle of the blackboard, the instructor places a vertical line. The child is then directed to write the alphabet, beginning with A on the right side of the line and B on the left side of the line, C on the right side of the line next to A and D on the left side of the line next to B and so on until completion of the alphabet.

14. Cut Arrows - Laterality and Directionality

a. Objectives - To develop skills in reproducing a line in a given direction. To increase ability in conceptualizing directions in space from a given spot.

b. Activity - An arrow with a right angle in its shaft is cut from construction paper. This is placed in front of the child with the arrow pointing to the right. He is then directed to draw the arrow in its four different versions, indicating four different positions around the table. This he must do without moving the arrow or his body.

15. <u>The Dubnoff School Program</u> - Level 1 - Laterality and Directionality

a. Objectives - To promote understanding of various line elements and how they relate to a geometric form. To increase accuracy in construction of lines between two given points and to reinforce concept of directionality.

b. Activity - This level is designed to develop fine motor control, to orient the child toward starting and stopping points and to inhibit perseveration. Section A: This section involves straight line concept encompassing horizontal, vertical line elements and a combination of the two, plus construction of the square. Section B: This section introduces the circular concept. This involves linear tracing, spatial planning and discrimination of spherical forms. Section C: The third section includes the diagonal line concept as related to directionality. The construction of the triangle and diamond are introduced. Section D: This section is designed to teach the intersection of lines in both straight and diagonal directions. An acetate protector is used for each sheet. The child is directed to follow the line accordingly.

16. <u>Baseball Game</u> - Spatial Judgment

a. Objective - To develop skills in line measurement and accuracy with fine muscle coordination.

b. Activity - A baseball diamond is drawn on the blackboard. The child is asked to go around the bases using chalk. Between each set of bases the child is asked to draw two equal lines, e.g., to get from home plate to first base would take two lines each of the same length. The metronome may be used with this activity.

17. <u>Shapes - Recognition and Discrimination</u> - Spatial Judgment

a. Objective - To develop skills in form discrimination and recognition as related to readiness in discriminating and recognizing numbers and letters.

b. Activity - Section B: Fairbanks-Robinson Program, Exercises 1-21. Within this section, the child is

required to discriminate visually between six basic shapes. This is done by use of concrete shapes which are matched with prepared worksheet forms.

18. Spatial Orientation Exercises - Spatial Judgment

    a. Objective - To promote the ability to perceive the position of figures in accurate spatial orientation. This relates readily to reversals and distortions in reading, writing, and arithmetic.

    b. Activity - Section E: Fairbanks-Robinson Program. This section introduces the basic concept of spatial orientation on a two dimensional level. Also, it reinforces left to right progression. Using the acetate protector, the child is asked to draw a line between two dots. There are varying numbers of lines and shapes on each page.

19. Constancy of Form and Size - Spatial Judgment

    a. Objective - To develop recognition of form and size when presented in variations of size, color, position, etc. as related to recognition of letters and numbers in variation.

    b. Activity - Section F: Fairbanks-Robinson Program. This section is used by the child to identify objects. No writing is used. The sizes of the six basic shapes vary from page to page. As the sheets become progressively more difficult, the shapes are presented in more than one position. The child is presented with a form and must find a corresponding form.

20. Spatial Relations Exercises - Spatial Judgment

    a. Objectives - As related to previous maze work, this section develops ability to plan and select appropriate courses of action. To increase accuracy in sequencing. These skills are a prerequisite for reading comprehension, correct ordering of words and ideas, seeing and using numbers in correct order and solving problems in sequential steps.

    b. Activity - Section H: Fairbanks-Robinson Program. Exercises 1-24. This includes determining spatial relations on a two dimensional plane. These exercises involve simple mazes which require the child

to determine a course which is most efficient. Two or more choices are given. Within the second section there is an overlap into sequencing exercises. These require the child to recall material he has seen and relates readily to reading comprehension.

21. Spatial Relations Exercises - Spatial Judgment

    a. Objectives - To promote skills in sequencing, beginning ability to scan and carry out a task in sequencing order. To develop skill in copying written material accurately.

    b. Activity - Section I - Fairbanks-Robinson Program. The pictures presented in this section require the child to determine the ordering of events in time in a meaningful progression. As he chooses the correct picture he must tell about what he thinks is happening in the picture. Exercises 16-18 provide experience in copying designs. Large tactile squares in yellow and red are used. The child then works tactually to reproduce given patterns. Follow-up exercises are presented.

22. Spatial Relations Exercises - Spatial Judgment

    a. Objective - To promote ability in visual organization and conceptualization dealing with spatial problems on a two dimensional plane.

    b. Activity - Section J: Fairbanks-Robinson Program. In this section, visual organization and conceptualization are stressed. Pages are placed in an acetate protector. The child is then required to compare the geometric forms on the right and choose the one that fits properly in the missing puzzle. If this is too difficult for the child, tactile materials should be used.

23. Squiggly Lines - Eye-Hand Coordination

    a. Objectives - To develop skills in fine motor control using a smooth and continuing line or figure. To promote ability in crossing the mid-line which is often difficult for the perceptually involved child.

    b. Activity - The child is asked to draw a continuous line on the blackboard in a "squiggly" fashion. The

line is approximately five feet long and lines may vary in design as the child becomes more proficient. The movement of the body should be smooth and continuous so that the forms are flowing. Examples include:

24. Checkerboard Tapping - Eye-Hand Coordination

a. Objectives - To promote accuracy in tapping, sequencing and eye-hand coordination. To maintain a set rhythm pattern.

b. Activity - A standard checkerboard is used in this exercise. At the most elementary level, the child is asked to tap each square on the checkerboard to the beat of the metronome. This progresses to only tapping the red or only the black squares on each beat. Then bilateral skills can be included by tapping the red with the right hand and the black with the left hand. Two children playing together can see whether they finish simultaneously which they should if they follow the beats of the metronome.

25. Rotating Peg Board - Eye-Hand Coordination

a. Objectives - To develop skills in eye-hand coordination and distinguishing between colors and form. To develop ability to place an object on a moving target.

b. Activity - The instrument used for this exercise consists of a circular peg board fastened to an electrical rotator. The peg board has individual rows of colors--red, white, blue, and yellow. There are several exercises which vary in level of difficulty. The most elementary exercise is tipping the peg board and directing the child to match the colored pegs with the rows of colors. As the child progresses, this is made more difficult by placing the peg board flat on the table as it rotates. Also small ping pong balls can be placed on the pegs as the disc rotates. Next, the student can be asked to make geometric forms, such as a circle, square or rectangle by outlining these forms with the pegs.

26. Coloring in Letters - Eye-Hand Coordination

a. Objectives - To improve accuracy in letter formation and distinguish between different types of letters in a variety of print. To reinforce coloring within a fixed line and knowledge of the alphabet.

b. Activity - The child is directed to color or pencil in large letters or the closed portion of letters which might be found on newspaper headlines or a printed page. This exercise enables a student to gain a better concept of the shape of letters and to develop the ability to stay within a specific line when using crayon or pencil.

27. Tracing - Eye-Hand Coordination

a. Objectives - To develop a smooth and continuous movement of fine muscles and to maintain a line along a given path within set barriers.

b. Activity - Large commercial pictures or teacher produced drawings of simple objects can be used with an overlay of clear plastic. In this exercise, the child is asked to stay on the line as he traces around the form.

28. Templates - Eye-Hand Coordination

a. Objectives - To develop a smooth and flowing line within a set barrier. To improve ability to reproduce an object. To reinforce concept of geometric forms. To promote self-expression.

b. Activity - For this exercise, commercial or teacher produced templates can be used. These forms include a triangle, square, rectangle, diamond, circle and a combination of forms on a single template. The child is directed to draw these forms with one steady and continuous motion. As a variation of this activity, the geometric forms can be used to make a picture.

29. Marsden Ball - Eye-Hand Coordination

a. Objectives - To improve ability in using the eyes and hands together so that the eyes can steer the hands and the hands can perform a task which is visually appraised. To promote rhythmic tapping of a moving

target and to improve posture. To minimize tension as related to similar tasks requiring much of the postural and tactile system, e.g. desk work.

b. Activity - In eye-hand coordination exercises using the Marsden Ball, the child bunts the ball with a rolling pin. The rolling pin has different colored bands in the middle, sides and ends. The ball is bunted from a color band on the pin to a corresponding color on a sheet placed on the wall near the hanging ball. This is continued for a count of five or more. The terms left and right are used and a metronome can be used to maintain rhythm.

30. Line Exercises - Eye-Hand Coordination

a. Objectives - To develop ability in executing various lines used to form letters and numbers. To encourage smooth and flowing use of fine muscles.

b. Activity - Section A: Fairbanks-Robinson Program, Level 1, Exercises 1-23. These worksheets contain wide lined figures with a large dot placed in one section. The sheet is put under an acetate protector. The child is asked to draw along the figure until he comes to the origin, in the case of the circle, for example. A smooth, flowing motion is desired.

31. Flash-X - Visualization

a. Objectives - To promote optimum efficiency in ability to recall objects seen at reduced exposure time. To reinforce readiness, numbers and letters in varying levels of difficulty.

b. Activity - A commercial tachistoscope is used. This consists of a round instrument with a mechanism flashing open a window at a speed of 1/25 of a second. A card is inserted in the flash-X mechanism and as the instrument is flashed, a window reveals a small object to be seen by the child. To check his response, he may hold the window open. The speed of the shutter is fast enough that considerable concentration is necessary to accomplish visualization. This card can be turned to different figures which are pictures, numbers, letters or combinations thereof. Other kinds

of cards contain readiness pictures, single letters, sequenced letters, single numbers, sequenced numbers, and more advanced vocabulary and math.

32. Memory Tic-Tac-Toe - Visualization

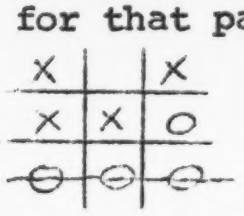
a. Objective - To increase visual dynamics with ability to visualize a given pattern and make additions in the visual memory by means of recall.

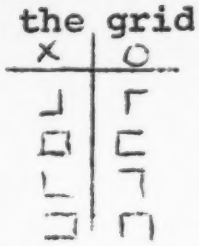
b. Activity - A standard grid is used. The boxes within are named in such a fashion that the top row becomes top-left, top-middle, top-right, etc. At the most elementary level, initials of each of these are used to play regular tic-tac-toe. At more advanced levels, only a verbal comment is used to indicate the individual position of X or O.

33. Visual Tic-Tac-Toe - Visualization

a. Objective - To promote ability to conceptualize and recall patterns as additions are made in the visual memory.

b. Activity - The standard grid is again placed on the blackboard. Next to it a vertical line with an X and a O at the top is drawn. As the individual decides his position on the grid, he uses a symbol for that part of the grid as an indicator.





O is the winner

34. Visualizing Line Length - Visualization

a. Objective - To develop visual discrimination and ability to predict distance and direction between two given points in "near space."

b. Activity - Using the tic-tac-toe grid, numbers from 1 to 9 are written. The child is asked to draw a line from one number to another. At a higher level, he is asked to draw the line next to the grid. At the most advanced levels, no grid is used; however, he must visualize the grid and numbers and draw the line without seeing the grid. Proper length of line and direction must be maintained.

35. Dominoes - Visualization

a. Objectives - To develop visual discrimination and recall as related to matching forms. To promote optimum efficiency of visual memory in recognizing form previously seen. To promote progression from tactile counting and reinforce number concepts.

b. Activity - Using two boxes of standard dominoes, the child is asked to match one box with those from another box. Again using standard dominoes, the instructor flashes one-half of the domino and the child is asked to find one just like the one which he has seen. The level of difficulty is determined by the length of time the flash takes. It is important to watch for actual counting and sub-vocalization in this activity.

36. Grid Spelling - Visualization

a. Objectives - To promote ability in verbalizing directions from visual imput (rather than pointing). To develop skill in recognizing possible letter sequence as well as definite word patterns. To reinforce knowledge of letters and spelling skills.

b. Activity - A grid with 20 or more boxes is placed on the blackboard. These are numbered from 1 to 5 along the vertical axis and lettered A to F along the horizontal axis. The child is required to place a letter on the grid by distinguishing the box by its call letter. For example, he might put the letter R in the upper right hand corner box which would be box A-5. That continues until words are made in a vertical, horizontal or diagonal fashion on the entire grid. Scores can be kept for each player and the amount of score is determined by the number of letters in a word.

37. Figure-Ground Discrimination - Visualization

a. Objective - To promote ability to find and focus visual attention upon a given stimulus when it appears with extraneous or distracting stimuli and to shift focus of attention appropriately. This relates to finding things, maintaining one's place on a page or dealing with crowded pages.

b. Activity - Section G: Fairbanks-Robinson Program, Exercise 1-21. Exercise sheets are presented with one form overlapping another. As the exercises progress in difficulty, more forms are presented. In these exercises the child is asked to distinguish between the figure and ground patterns presented. Use of the finger may be most helpful to a child throughout this section.

38. Visual Tracking - Visualization

a. Objective - To promote visual discrimination of letters, ability to distinguish left to right direction and skills in following a line of print. This relates readily to reversals, omissions, substitutions and additions in reading.

b. Activity - The tracking workbook is set up in such a fashion that the child is asked to find the letters of the alphabet within a group of scrambled letters. These must be found in sequence, progressing from left to right and top to bottom. As each letter is found it is crossed out. The pages become progressively more difficult as the type gets smaller. As speed is increased, each exercise can be timed. If desired, an acetate protector can be used to permit more than one use of the workbook.

39. Symbol Tracking - Visualization

a. Objective - To promote visual discrimination of symbols, letters, and numbers and skills in sequencing and left to right progression across the page.

b. Activity - In a similar fashion to the exercise mentioned above, symbol tracking is performed. Instead of using the alphabet, small pictures, numbers, and letters are set up in a pattern. The child is required to use sequencing to find each of these figures. Increased difficulty is obtained by way of smaller figures. An acetate protector can be used.

40. Handwriting with "Write and See" - Visualization

a. Objectives - To develop awareness of directions and to increase ability to make a required line in the correct direction with a smooth and unbroken motion. To give meaning to the skills required in handwriting.

b. Activity - While using these workbooks, the child is asked to use a special pen. There are several levels available, each one progressively more difficult. As he writes on the specially prepared paper, the child must form his letters correctly. When he is wrong, the pen makes a yellow rather than a gray mark on the page. This instant reinforcement facilitates the learning process. The exercises help greatly in developing fine motor skills.

VII. EQUIPMENT AND MATERIALS

In most instances simple, inexpensive and easily obtainable materials are required for the activities described. Listed below are the equipment and materials required for all of the activities.

Rubber balls of varying sizes
Clothesline rope
Chalkboard and chalk
Bean bags
Skinner Handwriting with "Write and See"
Dominoes
Twister
Shap-O
Build-O-Form
Copy-scope
Color forms
Winter Haven templates
Gessell Institute Kits
Snap-it
Check board
Pegboard (18" square) and pegs
Oaktag figures (front and back views)
Ditto masters for various games
Colored cubes
Parquetry blocks and design sets
Walking beam
Balance board
Junior trainers and pegboard discs
Flash-X Tachistoscope Sets
Symbol tracking sets
Visual tracking sets
Metronomes
Pathway School Programs
Perceptual-Motor Development Programs
Dubnoff School Programs
Erie Perceptual Motor Programs
Quiet counters
Crayons, magic markers, and pencils
Scissors
Clock arithmetic and spelling
Gummed stars and seals
Oragami paper
Construction paper
Oaktag
Plain paper
Lined paper

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